

Application No.: 10/038,640

Amendment and Response dated September 14, 2006

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Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the subject application, and please amend the claims as follows:

Claim 1. (Currently amended): A body insertable prosthesis, including:

a body insertable tubular structure including at least one flexible strand selectively formed to provide a plurality of discrete first tubular segments and a plurality of discrete second tubular segments in an alternating sequence;

wherein the first tubular segments and the second tubular segments have respective first and second nominal diameters when the tubular structure is in a relaxed state and wherein the tubular structure is radially compressible against an elastic restoring force to a predetermined diameter;

wherein the at least one flexible strand further is selectively configured to provide first axial stiffness levels and first radial force levels along the first tubular segments, and second axial stiffness levels and second radial force levels along the second tubular segments, when said tubular structure is radially compressed to the predetermined diameter;

wherein the first axial stiffness levels are higher than the second axial stiffness levels, whereby the second tubular segments, as compared to the first tubular segments, are adapted to more readily conform to a curvature of a body lumen in which the tubular structure is deployed; and

wherein the second radial force levels are higher than the first radial force levels;

wherein the at least one flexible strand includes a plurality of flexible strands helically wound in opposite directions to form multiple strand crossings defining strand crossing angles, including respective first obtuse and second obtuse strand crossing angles along the first and second tubular segments, respectively; and

wherein the second obtuse strand crossing angle is substantially the same as the first obtuse strand crossing angle.

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Claim 2. (Previously presented): The prosthesis of claim 1 wherein:
all of the first axial stiffness levels are substantially the same.

Claim 3. (Previously presented): The prosthesis of claim 1 wherein:
all of the second axial stiffness levels are substantially the same.

Claims 4-5 (Canceled):

Claim 6. (Currently amended): A body insertable prosthesis, including:
a body insertable tubular structure including at least one flexible strand selectively formed to provide a plurality of discrete first tubular segments and a plurality of discrete second tubular segments in an alternating sequence;
wherein the first tubular segments and the second tubular segments have respective first and second nominal diameters when the tubular structure is in a relaxed state and wherein the tubular structure is radially compressible against an elastic restoring force to a predetermined diameter;
wherein the at least one flexible strand further is selectively configured to provide first axial stiffness levels and first radial force levels along the first tubular segments, and second axial stiffness levels and second radial force levels along the second tubular segments, when said tubular structure is radially compressed to the predetermined diameter;
wherein the first axial stiffness levels are higher than the second axial stiffness levels, whereby the second tubular segments, as compared to the first tubular segments, are adapted to more readily conform to a curvature of a body lumen in which the tubular structure is deployed;
wherein the at least one flexible strand includes a plurality of flexible strands helically wound in opposite directions to form multiple strand crossings defining obtuse strand crossing angles, including respective first obtuse and second obtuse strand crossing angles along the first and second tubular segments, respectively; and

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wherein the second obtuse strand crossing angle is larger than the first obtuse strand crossing angle.

Claims 7-13. (Canceled):

Claim 14. (Previously presented): The prosthesis of claim 1 wherein:
the tubular structure consists essentially of the alternating sequence of the first tubular segments and the second tubular segments.

Claim 15. (Previously presented): The prosthesis of claim 14 wherein:
each of the tubular segments of the alternating sequence has an axial length of at least about 1 cm.

Claim 16. (Canceled):

Claim 17. (Previously presented): The prosthesis of claim 1 wherein:
the first and second nominal diameters are substantially the same.

Claims 18-24. (Canceled):

Claim 25. (Currently amended): A prosthesis insertable into body lumens with natural curvature, including:

a body insertable tubular wall incorporating a plurality of first tubular wall segments and a plurality of second tubular wall segments in an alternating sequence, the first and second tubular wall segments having respective nominal diameters when in a relaxed state and being radially compressible against an elastic restoring force to a predetermined diameter;

wherein the first and second wall segments when radially compressed to the predetermined diameter have respective axial stiffness levels, with the first tubular wall

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segments having relatively high first axial stiffness levels, and with the second tubular wall segments having second axial stiffness levels lower than the first axial stiffness levels, whereby the second tubular wall segments, as compared to the first tubular wall segments, are adapted to more readily conform to a curvature of a body lumen in which the tubular wall is deployed; and

wherein the first and second tubular wall segments when radially compressed to the predetermined diameter have respective radial force levels, with the first tubular wall segments having relatively low first radial force levels, and with the second tubular wall segments having second radial force levels higher than the first radial force levels; and

wherein the body insertable tubular wall is composed of at least one flexible strand and the at least one flexible strand incorporates a first number of filaments along each of the first tubular wall segments and a second number of filaments along each of the second tubular wall segments, wherein the second number is less than the first number.

Claims 26-51. (Canceled):

Claim 52. (Previously presented): The prosthesis of claim 25 wherein:

all of the first axial stiffness levels are substantially the same.

Claim 53. (Previously presented): The prosthesis of claim 25 wherein:

all of the second axial stiffness levels are substantially the same.

Claim 54. (Canceled)

Claim 55. (Previously presented): The prosthesis of claim 25 wherein:

all of the first radial force levels are substantially the same, and all of the second radial force levels are substantially the same.

Claim 56. (Canceled)

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Claim 57. (Currently amended): The prosthesis of claim 25 [[56]] wherein:
the at least one flexible strand includes a plurality of flexible strands helically wound in
opposite directions to form multiple strand crossings defining strand crossing angles.

Claim 58. (Previously presented): The prosthesis of claim 57 wherein:
the strand crossing angles along the second tubular wall segments are larger than the
strand crossing angles along the first tubular wall segments.

Claim 59. (Previously presented): The prosthesis of claim 57 wherein:
the strand crossing angles along the first tubular wall segments are substantially the
same, and the strand crossing angles along the second tubular wall segments are substantially
the same.

Claim 60. (Previously presented): The prosthesis of claim 57 wherein:
the nominal diameters of the second tubular wall segments are larger than the nominal
diameters of the first tubular wall segments.

Claim 61. (Previously presented): The prosthesis of claim 60 wherein:
the nominal diameters of the second tubular wall segments are substantially the same,
and the nominal diameters of the first tubular wall segments are substantially the same.

Claim 62. (Previously presented): The prosthesis of claim 57 wherein:
the strand crossing angles along the second tubular wall segments are substantially the
same as the strand crossing angles along the first tubular wall segments.

Claim 63. (Canceled)

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Claim 64. (Currently amended): The prosthesis of claim 25 [[63]] wherein:
the filaments along the first tubular wall segments include first and second different types of filaments.

Claim 65. (Previously presented): The prosthesis of claim 64 wherein:
the first filament type is selected from the group of filament types consisting of: metallic filaments and biostable non-metallic filaments; and the second filament type is selected from the group of filament types consisting of: metallic filaments, biostable non-metallic filaments, and biodegradable filaments.

Claim 66. (Previously presented): The prosthesis of claim 65 wherein:
the second type of filament is selected from the group consisting of bioabsorbable filaments.

Claim 67. Currently amended): The prosthesis of claim 25 [[56]] wherein:
the at least one flexible strand includes a plurality of biostable filaments, and a plurality of bioabsorbable filaments.

Claim 68. (Currently amended): The prosthesis of claim 25 [[56]] wherein:
the at least one flexible strand includes a first set of flexible filaments spanning substantially the length of the tubular structure and a second set of flexible filaments extending only along the first tubular wall segments.

Claims 69-71 (Canceled)

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Claim 72. (Previously presented): The prosthesis of claim 25 wherein:
the nominal diameters of the first and second tubular wall segments are substantially the same.

Claim 73. (Previously presented): The prosthesis of claim 25 wherein:
the tubular wall includes end segments at first and second opposite ends thereof, selected from the group of end segments consisting of: two first segments; two second segments; and a first segment and a second segment.

Claim 74. (Previously presented): The prosthesis of claim 25 wherein: the first and second tubular wall segments along said alternating sequence are adjacent one another.

Claim 75. (Previously presented): The prosthesis of claim 25 wherein:
each of the first and second tubular wall segments has an axial length of at least one centimeter.

Claim 76. (Currently amended): A body insertable prosthesis, including:
a body insertable tubular structure including a plurality of flexible strands selectively formed to provide a plurality of discrete first tubular segments and a plurality of discrete second tubular segments in an alternating sequence, wherein the flexible strands are helically wound in opposite directions to form multiple strand crossings defining obtuse strand crossing angles, including respective first obtuse and second obtuse strand crossing angles along the first and second tubular segments, respectively, wherein the second obtuse strand crossing angle is larger than the first obtuse strand crossing angle;
wherein the first tubular segments and the second tubular segments have respective first and second nominal diameters when the tubular structure is in a relaxed state, and the tubular structure is radially compressible against an elastic restoring force to a predetermined diameter;

wherein the at least one flexible strand further is selectively configured to provide first axial stiffness levels and first radial force levels along the first tubular segments, and second axial stiffness levels and second radial force levels along the second tubular segments, when said tubular structure is radially compressed to the predetermined diameter; and

wherein the first axial stiffness levels are higher than the second axial stiffness levels, whereby the second tubular segments, as compared to the first tubular segments, are adapted to more readily conform to a curvature of a body lumen in which the tubular structure is deployed.

Claim 77. (Previously presented): The prosthesis of claim 76 wherein:

all of the first axial stiffness levels are substantially the same, and all of the second axial stiffness levels are substantially the same.

Claim 78. (Previously presented): The prosthesis of claim 76 wherein: the second radial force levels are higher than the first radial force levels.

Claim 79. (Previously presented): The prosthesis of claim 76 wherein:

all of the first radial force levels are substantially the same, and all of the second radial force levels are substantially the same.

Claim 80. (Currently amended): The prosthesis of claim 76 wherein:

the first obtuse strand crossing angles are substantially the same, and the obtuse second strand crossing angles are substantially the same.

Claim 81. (Previously presented): The prosthesis of claim 76 wherein:

the tubular structure consists essentially of the alternating sequence of the first tubular segments and the second tubular segments.

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Claim 82. (Previously presented): The prosthesis of claim 76 wherein:
the first nominal diameters are the same, and the second nominal diameters are substantially the same.

Claim 83. (Previously presented): The prosthesis of claim 76 wherein: the second nominal diameters are larger than the first nominal diameters.

Claim 84. (Currently amended): A prosthesis insertable into body lumens with natural curvature, including:

a body insertable tubular wall composed of a plurality of flexible strands helically wound in opposite directions to form multiple strand crossings defining obtuse strand crossing angles, and further incorporating a plurality of first tubular wall segments and a plurality of second tubular wall segments in an alternating sequence, the first and second tubular wall segments having respective nominal diameters when in a relaxed state and being radially compressible against an elastic restoring force to a predetermined diameter, wherein the obtuse strand crossing angles along the second tubular wall segments are larger than the obtuse strand crossing angles along the first tubular wall segments;

wherein the first and second wall segments when radially compressed to the predetermined diameter have respective axial stiffness levels, with the first tubular wall segments having relatively high first axial stiffness levels, and with the second tubular wall segments having second axial stiffness levels lower than the first axial stiffness levels, whereby the second tubular wall segments, as compared to the first tubular wall segments, are adapted to more readily conform to a curvature of a body lumen in which the tubular wall is deployed.

Claim 85. (Previously presented): The prosthesis of claim 84 wherein:
all of the first axial stiffness levels are substantially the same, and all of the second axial stiffness levels are substantially the same.

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Claim 86. (Previously presented): The prosthesis of claim 84 wherein:
the first and second tubular wall segments when radially compressed to the
predetermined diameter have respective radial force levels, with the first tubular wall segments
having first radial force levels, and with the second tubular wall segments having second radial
force levels.

Claim 87. (Previously presented): The prosthesis of claim 86 wherein:
the second radial force levels are higher than the first radial force levels.

Claim 88. (Previously presented): The prosthesis of claim 86 wherein:
all of the first radial force levels are substantially the same, and all of the second radial
force levels are substantially the same.

Claim 89. (Currently amended): The prosthesis of claim 84 wherein:
the obtuse strand crossing angles along the first tubular wall segments are substantially
the same, and the obtuse strand crossing angles along the second tubular wall segments are
substantially the same.

Claim 90. (Previously presented): The prosthesis of claim 84 wherein:
the nominal diameters of the second tubular wall segments are larger than the nominal
diameters of the first tubular wall segments.

Claim 91. (Previously presented): The prosthesis of claim 84 wherein:
the nominal diameters of the second tubular wall segments are substantially the same,
and the nominal diameters of the first tubular wall segments are substantially the same.

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Claim 92. (Previously presented): The prosthesis of claim 84 wherein:
the nominal diameters of the first and second tubular wall segments are substantially the same.

Claim 93. (Previously presented): The prosthesis of claim 84 wherein:
the first and second tubular wall segments along said alternating sequence are adjacent one another.